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ABSTRACT

Intended to categorize the literature on writing with word processors in high school and college classrooms and to determine the quality of the literature as well, this critical review looks at selected works on word processing in English instruction. The first section examines studies and methodologies, while the second section investigates research conducted in the classroom. The third section discusses findings of these and other researchers, and indicates: (1) that most agree that word processing eases the revision process; (2) that researchers disagree on the quality of the revisions and on the effects of word processing on writing anxiety; (3) that some researchers have found that the social nature of computers increases students' sense of audience and feedback; (4) that other researchers seem over-enthusiastic about the effects of particular software packages on their students' writing; and (5) that still others warn that newfangled devices like computers are not enough to teach students to write better. The concluding section stresses the need for more longitudinal studies on computers and writing instruction and for more investigation of negative effects of computer use. (Three pages of references are appended.) (SKC)

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USING WORD PROCESSORS IN HIGH SCHOOL AND COLLEGE WRITING INSTRUCTION

A Critical Review of Current Literature

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Abstract

A critical look is taken at case studies, cross-sectional surveys, and observations by secondary and college level educators reporting on the use of word processors for writing instruction. The reviewed literature is classified into (1) useful tips for using word processors in English classrooms, and (2) discussion of effects of using word processors on students' writing quality.

Findings reveal high interest in word processor-assisted writing instruction. But there is a lack of rigorous, long-term research in the field. The reviewer advocates more longitudinal surveys over multi-year periods in order to determine more specifically the effects of using this electronic newcomer to the writing classroom.

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Introduction

Using word processors in English classrooms has been receiving considerable interest and scrutiny from educators as indicated by a number of reviews on the topic. Such interest, it seems, ranges from enthusiastic welcome to expressed skepticism about merits of this new technology. While some acclaim it equal in impact to Gutenberg's printing press, others regard it as little more than a super-handy pen or pencil. However, the depth with which word processor use in writing instruction has been discussed is very uneven. Studies range over a wide spectrum from teachers' single event insights to rigorous research conducted over more substantial periods of time by entire teams of college professors.

Some merely offer tips to other teachers intending to incorporate word processors into their English instruction forming rather general conclusions on the basis of personal experience. Others have conducted cross-sectional surveys or case studies. The most extensive of them, by Teichman and Poris (1985), was performed twice in two years. Each

time, progress of 160 students, divided into two subgroups, was traced during the academic year.

In another fairly extensive study by Fitch (1985), the progress of sixty seventh grade students in a required writing class was traced over a nine week period to determine the efficacy of word processors on such variables as writing achievement, level of anxiety about writing tasks, and the level of revisions. Studies with less rigorous research designs in current literature generally are positively biased and parade the many benefits of word processor use by relating individual experiences and successes.

The most notable wrinkle in the fabric of current research into using word processors for writing instruction seems to be an absence of experimental data, lack of control of variables, as well as examination of sufficiently lengthy spans of time in students' writing instruction. Such flaws lessen value and generalizability of conclusions. A time span of two semesters appears to be the longest period over which any study has been conducted.

Studies and Methodologies

The most exhaustive study included in this review offered somewhat flat findings about the use of word processors in writing classrooms (Teichman and Poris, 1985). The investigators were strikingly clinical in their focus. They traced progress of 160 students enrolled in a college

freshman English course. Subjects were divided into control and experimental groups of equal size. A team of eight instructors met regularly to monitor the grading of essays according to identical criteria. The findings indicated no significant difference between the two groups in final spelling, grammar, and standard English abilities. However, they found incidence of improvement in both quantity and quality of revision by those students who had used word processors. Their justifiable conclusions claimed that students using word processors spend more time revising papers than students who use the nearly antiquated typewriter with its attendant tedium.

Results from cross-sectional surveys in the field seem to have been dubious. Johnson (1987) has explored students' pre-existing attitudes toward use of word processors. Her questionnaire was completed by 144 students all of whom she subsequently interviewed. Explored were a dozen variables ranging from prior experience with word processors to presence of sound effects. She linked each with the predicted success of word processors as an educational tool. Her results led her to conclude that students are indeed motivated to use word processors. However, a disturbing statistic in the study also revealed 46% of those questioned to have actually owned word processors or microcomputers. This clearly reflects a wealthy school district and points to possible neglect to consider an entire array of possible variables relating to socio-economic background.

Field studies of classrooms have been frequent. They have produced useful insights for writing instructors. Observations of the social effects of using the word processor show that the atmosphere in the writing classroom can change favorably when high-tech tools are used. One investigator hypothesized that changes in patterns of social interaction within the classroom occur due to the presence of the word processor's monitor screen because it heightens one's sense of audience (Bruce, 1985, and Daiute, 1983). In another discussion, Muldrow suggests that such technology allows students to share strengths in a forum-like environment (1986).

Investigators in the Field

Master's degree candidate Fitch and researchers Teichman and Poris have conducted the most clinical and exhaustive research in the field. They present ambitious attempts to control as many variables as possible in the evaluation of how using word processors affects quality of and anxiety toward writing. Tables, charts, a multitude of averages on essay and objective test scores, and calculation of standard deviations are offered to show bases of drawn conclusions.

Writing instuctors from colleges and secondary schools are the most prolific contributors to the literature in this field. Their message is generally intuitive rather than quantitative and scientific, and is based on widely varying

classroom experiences. One charged with implementing a computer-assisted writing program in a school, for instance, might offer recommendations and admonitions based on new-found experience.

Findings

Agreement among educators and researchers is well-nigh universal: using word processors does ease the revision process. Its filing, editing, and text manipulation features are regarded as a welcome facilitator to the process of writing (Freeman, 1987, and Nash, 1985). One researcher has felt so strongly about the wonders of this new technology that he dubbed it "the pencil of the future" (Saunders, 1986).

Yet, while all agree that revision is made easier by use of word processors, some research suggests that students do not spend the saved time on substantial improvements of texts. Revisions, some suggest, are actually cosmetic (Womble, 1984). In fact, Harris even claims that students with access to word processors make fewer substantial revisions than those without them (1985). Several writers on the subject only conjecture that time gained by users of word processors will be spent on revision (Radencich, 1984). Such a conjecture, however, may give too much credit to student's inspiration, industry, and diligence and actually express teachers' hopes rather than observed data.

Many consider the primary strength of word processors to be the fluid nature of the text. Writing products are easily edited (Catano, 1985, and Sudol, 1985). This releases writers from the mechanical tedium associated with writing, allowing them to think and create more readily (Larsen, 1984, and Daiute, 1983). McGarvey suggests that instructors can make on-the-spot corrections to texts and thus have more time to evaluate and improve content (1986).

A significant portion of the reviewed studies indicated that use of word processors change attitudes toward revision. Schwartz (1982) hypothesizes that the generous invitation offered by word processors to edit and re-edit softens the typical student's view of revision as punitive. Insights like these are usually offered by classroom writing instructors whose close student contact and everyday experience lend substance, if not proof, to their inputs.

Much of the literature in the field attends to the effects of word processor use one writing anxiety. Thought is divided here. Some opine its use has retired the notion that words once written are immutable and sacrosanct. And because change is easy and neat, anxiety is naturally reduced (Branan, 1984). Personal interviews, as perhaps the only practicable method of fathoming writers' anxiety without EKG-like wire wizardry, have resulted in mixed findings. Teichman and Poris' results (1986) indicate that word processing leads to reduction of writing anxiety. The large size of this sample group (320) increases the

generalizability of their findings. Fitch (1986), who sampled a group only about one-fifth that size (60) found no significant change in attitude toward writing between students with word processors and those without.

So far, findings on level of writer's anxiety as related to word processor use have been inconclusive. Student interview responses seem to hinge on a legion of factors--phrasing of questions, intonations of interviewers' voices, anticipated or achieved grade in the course, and others, all of which may influence students' expression of their writing anxieties. No study standardized the interviewing process with one even admitting that interviews were unstructured (Johnson, 1987).

Social consequences of using word processors in writing classrooms has held the interest of many researchers and educators. Observations reveal that the public nature of monitor displays cause the students to write with an increased sense of audience (Bruce, 1985, and Wheeler, 1985). With just one monitor, peer evaluation and feedback is facilitated. Additionally, brainstorming proliferates as the writing process transforms into a collaborative effort in the forum of the classroom (Morocco, 1986).

Some field studies suggest that students are encouraged toward greater precision in expression because the public nature of the monitor and the inherent precision of the programs demand it (Daiute, 1983, and Newman, 1987). But no effort has been made to collect expansive, quantitative data

at this early stage of interest in the entire phenomenon of word processor-assisted writing instruction.

Enthusiasts' discussions of the wonderful and scintillating uses of software programs and their effect on writing skills comprise most of the reviewed literature. Journal articles sing the praises of spelling checker software, of programs drilling students in standard English, and others which facilitate the process of writing (Shuman, 1985, and Burdman, 1986). Authors of these articles like these make sweeping comments on observed improvement in student writing but do not closely explore actual levels of such achievements. Indeed, Fitch (1985) found no substantial difference in attained levels of mechanical skills between students who had used the new technology and others who had not.

That word processors are simply a tool and not a substitute for writing instructors seems widely asserted by educators who believe that newfangled gadgets alone cannot lead to drastic improvements in writing. Many stress that a good writing instructor is essential to enhance word processor use (Wheeler, 1985, and Dayton, 1986). According to Daiute (1985), these instruments are not nearly as important as formulating a sound teaching philosophy for writing instruction. Indeed, one contributor suggests that the skills necessary to operate a word processor should be taught more rigorously than takes place at the moment (Opack, 1986). Most of the investigators asserted that

knowledge of how to use the new technology should not be eclipsed by enthusiasm for the new machines which could lead to an unfulfilled potential for word processors.

Conclusions

To sound the depths of word processors' influence on student writing will clearly require more research than is available so far. Even the most exhaustive studies chart progress of students over two semesters at most. As writing is a complex and oftentimes slow to evolve skill, many of these studies must be considered shallow. At least several years of rigorously gathered data should be collected to produce more definitive conclusions. Longitudinal surveys designed to monitor the progress of students over at least a four year period may provide such data. Similarly, interpretation of data gained in well-meaning but unstructured interviews is too subjective. Indicated also is a need for a greater number of research teams replacing individual investigators. This would offset distortion of results due to personal bias and facilitate the continuity in time-consuming but badly needed longitudinal surveys.

The literature on the topic is voluminous due to current interest in the new technology. Most studies are quite recent and their flavor reflects a vibrant enthusiasm for this curricular innovation in writing instruction. It seems that word processors do indeed reduce much of the

tedium associated with composition, revision, and finalization of writing.

Nobody, so far, seems to have looked into negative fallout from word processor use. This omission leads one to suspect a considerable positive bias and a likely tainting of results via the well-known halo effect. The zeal of word processor enthusiasts, which appears to dominate most of the literature, carries with it a certain bandwagon mood. Who would want to be known as a reactionary amid a surge to move writing instruction into the high-tech era of the future? However, if the "pencil of the future" is to be sharpened, stringent, well-designed investigations need to be conducted to yield clear guidelines for those who wish to use it.

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